Rana Waqar Tabish

Micro/Molecular Biology | Bioinformatics | Poultry Science

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Work Experience

Graduate Research Assistant — Aug 2022 - Present
Auburn University

- Investigating nutritional strategies to optimize performance of broilers under a mild enteric challenge using multi-omics approaches
- Conducted and contributed to multiple live bird experiments
- Performed intestinal microbiome and mucosal transcriptome analysis to understand disease mechanisms

Graduate Teaching Assistant — Aug 2024 - Dec 2024
Auburn University

Course: Advanced Poultry Health (POUL 5080-6080)

- Supported course delivery and discussions on advanced poultry health topics
- Graded case reports and review articles from undergraduate and graduate students and provided feedback

Poultry Veterinarian — Oct 2020 - Jul 2022
Ibrahim Poultry, Pakistan

- Diagnosed diseases, devised treatment regimens and structured vaccination protocols for various viral, bacterial and fungal diseases
- Effectively supervised personnel and improved broiler production performance parameters

Internship — Feb 2020 - Jul 2020
Research Center for Conservation of Indigenous Breeds

- Performed DNA tests for the identification of purebred animals
- Collected data of quantitative and qualitative genetic traits from field animals
- Analyzed data using statistical software and created genetic trends for determining genetic improvement

Undergraduate Research Assistant — Jun 2019 - Dec 2019
University of Veterinary and Animal Sciences

- Contributed to the development of a farmer-friendly molecular assay for the detection of anthelmintic resistance in stomach worms, *Haemonchus contortus*

Education

Doctor of Philosophy in Poultry Science — Aug 2022 - Present
Auburn University

Graduate Certificate in Bioinformatics — Aug 2022 - Dec 2024
Auburn University

Doctor of Veterinary Medicine (DVM) — Oct 2015 - Jul 2020
University of Veterinary and Animal Sciences

Publications

1. Fatima A, **Tabish RW**, Naseer M, Shahzad A, Sufyan M, Munawar A, Asghar A, Shahid Z, Khan Z and Rashid M, 2023. Molecular pathology of campylobacter. In: Altaf S, Khan A and Abbas RZ (eds), Zoonosis, Unique Scientific Publishers, Faisalabad, Pakistan, Vol 4: 531-543.
2. Nasir, A., Sikandar, A., Shakoor, A., Kashif, M., **Tabish, R. W**., Hussain, Iqbal, M. U. (2023). Detection of subclinical ketosis in dairy buffalo herds of Tehsil Jhang, Punjab, Pakistan. Buffalo Bulletin, 42(3), 305–311.
3. Akram, S. A., Nasir, A., **Tabish, R. W**., Ijaz, F., Muhammad, S. A., & Bashir, I. (2021). Horizontal mattress suturing for repairing ruptured muzzle and nasal septum in Nili-Ravi buffalo. Buffalo Bulletin, 40(3), 509–513.

PhD Projects and Collaborations (Prospective Publications)

1. Cross-sectional analysis of intestinal microbiota and mucosal gene expression in broilers under different coccidiosis and necrotic enteritis challenge models **Rana Waqar Tabish**, Nelsa Beckman, Samuel Rochell, Wilmer Pacheco, Rochell, William Dozier, Klint McCafferty, Ruediger Hauck
2. Evaluation of different coccidiosis and necrotic enteritis challenge models on broiler performance, nutrient digestibility, and intestinal mucus production Nelsa Beckman, **Rana Waqar Tabish**, Wilmer Pacheco, Samuel Rochell, William Dozier, Klint McCafferty, Ruediger Hauck, Samuel Rochell
3. Metagenomic analysis of microbial populations in the broiler jejunum and cecum fed diets with varying levels and concentrations of dietary fiber under a mild enteric challenge. **Rana Waqar Tabish**, Yang Lin, Matthew Bailey, William Dozier, Klint McCafferty, Samuel Rochell, Ruediger Hauck
4. Transcriptomic profiles of jejunal and cecal mucosa and submucosa in broilers fed diets with varying levels and concentrations of dietary fiber under a mild enteric challenge. **Rana Waqar Tabish**, Yang Lin, Matthew Bailey, William Dozier, Klint McCafferty, Samuel Rochell, Ruediger Hauck
5. Impact of dietary fiber levels and concentrations on performance and nutrient digestibility in broilers under a mild enteric challenge from 1 to 35 days of age. Yang Lin, **Rana Waqar Tabish**, Wilmer Pacheco, Samuel Rochell, William Dozier, Klint McCafferty, Ruediger Hauck, Samuel Rochell
6. Effect of nanosilver-treated feed on intestinal microbiota, jejunal lesion scores and the production efficiency in broiler flock subjected to subclinical necrotic enteritis challenge. Pankaj Gaonkar, **Rana Waqar Tabish**, Ruediger Hauck, Laura Huber
7. Effect of different calcium concentrations and limestone particle sizes in broiler diets on jejunal microbiota and jejunal and cecal mucosal transcriptome under a mild enteric challenge **Rana Waqar Tabish**, Joseph Gulizia, Jose Vargas, Jose Hernandez, Cristina Simões, Eva Guzman, Wilmer Pacheco, Samuel Rochell, Matthew Bailey, William Dozier, Klint McCafferty, Ruediger Hauck

Oral Conference Presentations

IPSF 2025: Impact of dietary fiber types and concentrations on jejunal and cecal gene expression in broilers with a mild enteric challenge. **Rana Waqar Tabish**, Yang Lin, Samuel Rochell, Wilmer Pacheco, Matthew Bailey, William Dozier, Klint McCafferty, Ruediger Hauck

AAAP 2024: Transcriptome analysis of the jejunal and cecal mucosa and submucosa of broiler chickens with mild enteric challenge fed diets containing varying calcium concentrations and limestone particle sizes. **Rana Waqar Tabish**, Joseph Gulizia, Jose Vargas, Jose Hernandez, Cristina Simões, Eva Guzman, Wilmer Pacheco, Samuel Rochell, Matthew Bailey, William Dozier, Klint McCafferty, Ruediger Hauck

IPSF 2024: Influence of different calcium levels and limestone particle sizes on the intestinal microbiome in broilers upon mild enteric challenge. **Rana Waqar Tabish**, Joseph Gulizia, Jose Vargas, Jose Hernandez, Cristina Simões, Eva Guzman, Wilmer Pacheco, Samuel Rochell, Matthew Bailey, William Dozier, Klint McCafferty, Ruediger Hauck

IPSF 2024: The impact of Salmonella Typhimurium and coccidiosis vaccine on the cecal transcriptome in broiler chickens in the late stage of production. Andrea Pietruska, Steven Kitchens, **Rana Tabish**, Maria Terra-Long, Ken Macklin, Stuart Price, Rüdiger Hauck

Wet Lab Skills

a. Bacterial isolation and purification
b. DNA & RNA extractions
c. PCR
d. Spectrophotometry
e. Preparation and maintenance of primary cells lines
f. Experience with necropsy of animal models & embryos
g. Necrotic enteritis lesion scoring
h. Microscopy
i. 16S microbiome library prep

Bioinformatics Skills

a. Transcriptome profiling
b. Metagenomic characteriztion
c. 16S Microbiome analysis
d. Protein-protein Interaction and Network Analysis (cytoscape)

Programming Skills

Clouds

a. Alabama Supercomputer Authority
b. Easley Cluster

Programming Languages

a. Bash
b. R

Awards

2025 AAAP Foundation Y.M. Saif Poultry Scholarship — Jan 2025

Higher Education Commission Academic Scholarship from HEC Pakistan — Jan 2016 - May 2020

Student Merit Scholarship (Twice) from University of Veterinary and Animal Sciences — 2017 - 2019

I hereby declare that all the information contained in this resume is in accordance accurate to the best of my knowledge. References can be provided upon request